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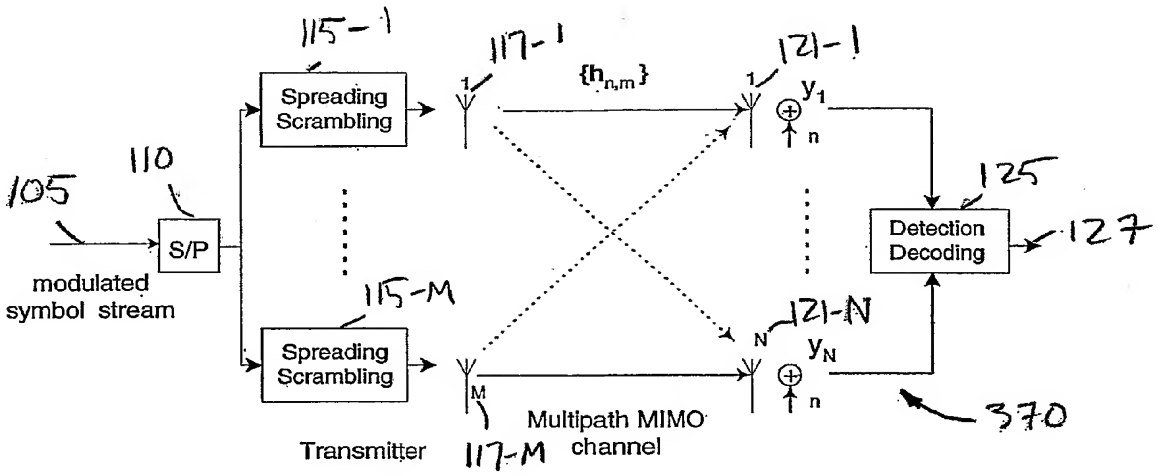
(54) Title: CONSTRAINED OPTIMIZATION BASED MIMO LMMSE-SIC RECEIVER FOR CDMA DOWNLINK



(57) Abstract: A system according to embodiments of this invention provide a multiple transmit antenna (117-1..M), multiple receive antenna (121-1..N) (MIMO) receiver (125) design for the communication downlinks such as those used in CDMA technology. Two algorithms referred to as the MIMO LMMSE-FFT and MIMO LMMSE-SIC (Successive Interference Cancellation) algorithms, are described in detail. In embodiments of the invention, the interference cancellation step is achieved without the impractical assumption of the knowledge of all the active Walsh codes in the systems, unlike many other interference cancellation based algorithms found in the literature.

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